

REMARKS

Responsive to paragraph 6 of the office action, claim 34 has been canceled.

1. The Rejection of Claims 15-19, 21-24, 26, 28, 29 and 32, 33, 35 and 36 for Obviousness Over Ichimura et al - US 4,891,300 in View of Fansler et al is traversed for the reasons that follow.

Ichimura et al - US 4,891,300 pertains to a photosensitive composition containing a saponified PVA derivative having a backbone to which are grafted a first photosensitive unit comprising a styrylpyridinium or styrylquinolinium salt and a second photosensitive unit comprising a polymerizable ethylenic unsaturated compound (column 6, line 60 to column 7, line 39). In examples 1-7 of Ichimura et al, the compositions further contain a photo-polymerization initiator such as p-dimethylaminobenzoate and a photosensitizer such as 2,4-diethylthiozanthone, dissolved in a solvent.

When the photosensitive composition of Ichimura et al is irradiated, the first photosensitive units bonded to the PVA backbones undergo photodimerization with each other so that the PVA is crosslinked. At the same time, the second photosensitive units bonded to the PVA backbones undergo photo-radical polymerization with each other so that the PVA is also crosslinked. These reactions are, however, quite different from acid-catalyzed photocrosslinking of a water-soluble resin by an insolubilizing agent in the present invention.

Ichimura et al do **not** disclose:

1. an acid former of any kind;
2. a sensitizer in the form of fine particles;
3. “an acid-reactive insolubilizing agent dissolved or dispersed in water for converting the water-soluble resin into an insoluble form in the presence of said acid”;

and

4. “a photosensitive composition comprising a styrylpyridinium salt compound, a polyvinyl acetate derivative and a light polymerizable ethylenically unsaturated compound,” quoting the Examiner’s assertion in the first paragraph under heading 8 at page 3 of the office action.

Regarding (1), lack of a teaching of an acid former, the Examiner does not assert that Ichimura et al discloses an acid former and, in point of fact, no acid former is disclosed by Ichimura et al.

If the Examiner regards the photopolymerization initiation of Ichimura et al, such as ethyl p-dimethylaminobenzoate, as an acid former, the Examiner’s understanding is not correct. It is well known that ethyl p-dimethylaminobenzoate is a photo-radical polymerization initiator (see, for example, U.S. Patent No. 7,264,329, col. 39, Ins. 55-61 and col. 40, Ins. 11-22). It is also evident that ethyl p-dimethylaminobenzoate cannot function as an acid former, because it is a basic compound.

Regarding (3), lack of a teaching of “an acid-reactive insolubilizing agent”, again the Examiner does not identify what, if any, component disclosed by Ichimura et al might be “an acid-reactive insolubilizing agent. . . .” In point of fact, the compositions of

Ichimura et al contain no such component.

Regarding (4), the Examiner's mischaracterization of the compositions of Ichimura et al, Ichimura et al do not teach a photosensitive composition comprising a styrylpyridinium salt compound, a PVA derivative and an ethylenically unsaturated compound as the Examiner has contended. In Example 1, the two compounds are reacted with the PVA so that they are grafted and bonded to the PVA. If the PVA and the two compounds are in the form of a mere physical mixture, no crosslinking of PVA can occur by irradiation with light. In Example 1 (and Examples 2-5, as well), the photopolymerization initiator and sensitizer are added to the reaction mixture containing the grafted PVA product. (The composition of Example 7 is composed of : (A) a PVA derivative containing first and second photosensitive units, (B) a PVA derivative containing only the first photosensitive unit, and (C) a mixture of an ethylenic unsaturated compound, a photopolymerization initiator and a sensitizer.)

Regarding (2), lack of a teaching of a sensitizer in the form of fine particles, **even** if it were obvious from the teachings of Fansler to disperse a sensitizer, in the form of solid particles, in a photosensitive composition of Ichimura et al, that hypothetical composition would still lack (1) an acid former in the form of solid particles or in any other form and (3) "an acid-reactive insolubilizing agent. . . ."

Moreover, contrary to the Examiner's understanding of Fansler et al, Fansler et al do not disclose a sensitizer in the form of solid particles in a radiation-sensitive resin composition.

Fansler et al disclose an article including an oriented PVA polymer film, and, laminated thereon, an acid donor layer containing a photoacid generator (Abstract). When the article is exposed to radiant energy while being heated, a generated photoacid migrates and diffuses into the PVA polymer layer to catalyze the dehydration thereof, thereby producing conjugated blocks of poly(acetylene) ([0074]). The exposed article is used as a polarizer. Nothing migrates into the photosensitive composition (PVA layer) in the form of solid particles. The “acid donor” itself (as opposed to the “photoacid” which it generates) does not migrate into the PVA layer in any form

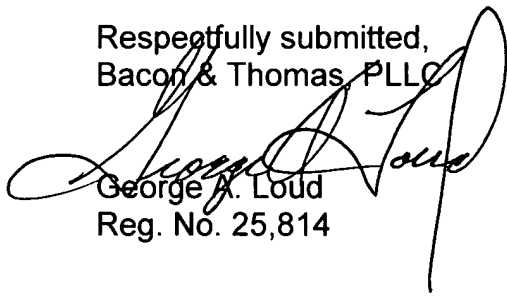
The Examiner again errs in saying “Fansler teaches a photosensitive composition comprising a PVA and a photoacid generator dispersed therein”. In [0031], it is explicitly described that the acid donor layer comprises a separate layer adjacent to the PVA layer. The acid donor layer may be a coating of the photoacid generator on PVA layer. Alternatively, the acid donor layer may be dissolved or dispersed in an adjacent polymer layer. The “adjacent polymer layer” cannot be the PVA layer or any radiation-sensitive composition. Paragraph [0033] of Fansler et al teaches:

If the acid donor layer comprises the photoacid generator dissolved or dispersed in an adjacent polymer layer, the polymer may be chosen from any polymer that is non-reactive toward both the photoacid generator, and incipient acid generated therefrom, and allows diffusion through the polymer matrix into the adjacent vinylalcohol polymer layer. [Emphasis added]

Thus, Fansler et al merely disclose a solid polymer layer which is laminated on a solid PVA layer and which comprises a photoacid generator dispersed in the solid polymer, non-photosensitive layer.

The rejections of claims 15 and 25 for obviousness (paragraph 9) and claims 15 and 20 for obviousness (paragraph 10) are traversed because even if the Examiner's characterizations of Kawamura et al and Ichimura et al are correct, they would not cure the defects/deficiencies of the basic combination of Ichimura - US 4,891,300 and Fansler et al, as noted above.

Respectfully submitted,
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